Remarks

Applicant requests reconsideration and allowance of this application in view of the foregoing amendment and the following remarks.

By this amendment, claim 17 is corrected to make it dependent on previous claim 16, not on claim 19.

Applicant respectfully traverses the rejection of claims 1-12, 16-25, 27 and 29-33 under 35 U.S.C. 102(b) as being anticipated by Kojima (4,892,569). These claims all specify coalescing oil in the air stream. Coalescing is different from filtering.

Coalescing agglomerates particles within the separator cartridge. The fluid flows through a coalescing medium. The particles in the fluid initially stick to the coalescing medium but then combine together into one larger, indistinguishable mass--for example, as placing one drop of water on another produces a single larger mass of water within which the two individual drops are indistinguishable. Once the coalesced mass is sufficiently large, it is pushed by the fluid flow stream to pass through the coalescing medium, where it is thereafter it is captured on another layer of material, outside the coalescing medium. The coalesced material when thus captured thereafter drops by gravity to a sump. The material is drained from the sump as required--for example, in the present instance some claims specify recycling this material.

Thus, for example, independent claim 1 specifies "an oil separator cartridge connected with said fixture for coalescing oil in air supplied to said oil separator". Independent claim 16 specifies the method steps of "directing compressed air into a cartridge of an oil separator to coalesce oil in the compressed air", and "collecting the coalesced oil in a sump attached to the oil separator". Independent claim 22 specifies "an oil separator cartridge connected with said fixture for coalescing oil in air supplied to said oil separator". Independent claim 27 specifies "an oil separator cartridge attached to said fixture for coalescing oil in air supplied to said oil separator".

Kojima, on the other hand, uses a filter to filter the oil from the air. A filter has openings for a fluid flow, openings of a size that permit only certain (smaller) contaminants to pass through. Larger contaminants do not pass through the filter, but rather collect on the filter medium. The larger contaminants never agglomerate, and never pass through the filter medium (as happens in a coalescing medium). Instead, the larger particles simply pile up. This causes a decrease in fluid flow rates through the filter. When the decrease is sensed to be unacceptably great, the captured material must be manually removed (for example by removing and replacing the filter) or through purging, by a back flow across the filter medium to remove the contaminants.

Kojima discusses this operation as follows, in Columns 7 and 8.

> When the compressor (23) is turned on, compressed air is supplied from the compressed air supply port of the compressor (23) through a passage (106) to the drain device (107). In the oil separator (107) compressed air is supplied to the connector aperture (84) and passes through the through-hole (85), the filter support member (82), and the filter (57) to the space (87) inside the reservoir tank (45). Since the compressed air passes through the filter (57), all oil and residues contained in the compressed air are thereby eliminated, so that clean compressed air flows through the connector aperture (86) of the dryer device, opens the non-return valve (110) and reaches the interior of the air dryer device (1).
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> . . .
>
> When the air pressure inside the main tank (27) has reached a predetermined value, for example, 8 Kg/sq.cm. the governor (28) generates a control pressure acting as an unload pneumatic signal, and this pressure is supplied to the drain valve element (109) of the oil separator (107) and the regenerating valve element (6) of the air dryer device (1). That is to say, the pressure is supplied to the control port (not shown in the figure) of the drain valve element (109), and the control port (32) of the regenerating valve element (6). The signal pressure supplied from the governor (28) to the control parts is conducted to the respective chambers (93) (70) and the air pressure will operate the corresponding control pistons (94) (68). However, while the piston (94) of the drain valve element (109) of the oil separator (107) is displaced in a downward direction, as shown in FIG. 3, in such a manner as to compress the spring (95), the other piston (68) in the regenerating valve element (6) of the air dryer device (1) does not move. As the control piston (94) of the drain valve element (109) moves downward, the valve body (97) is dislocated from the exhaust valve seat (98a), and, as a result, the interior of the reservoir tank (45) is connected to the atmosphere through a filter (57) and a passage (85). Consequently, the compressed air in the reservoir tank (45) is exhausted to the outside through said filter

> (57) and passage (85), thereby causing the drain residues adhering to the surface of the filter (57) to be discharged into the atmosphere as drainage residue through the passage (85) and thus, the filter (57) is regenerated.

Thus, it is clear that in Kojima, oil is collected on the filter, does not pass through, does not get captured on another layer, and does not drain therefrom into a sump. Rather, the collected oil stays on the filter material until it is thereafter purged by a reverse flow of air as described. This is not coalescing as specified by the claims herein. For this reason alone, the reference does not meet the terms of claims 1-12, 16-25, 27 and 29-33, and those claims are allowable.

In addition, applicant notes that these claims have many other features that are not shown in or suggested by Kojima. As one example, Kojima does not show a sump for collecting coalesced oil, as is specified in many of these claims. As another example, Kojima does not show a plurality of ports for directing air into the separator cartridge that, together, have a flow area at least equal to the inlet flow area of the separator. For these reasons also, the claims are allowable.

Applicant respectfully traverses the rejection of claims 13-15, 26 and 28 under 35 U.S.C. 103(a) as being obvious over Kojima in view of McCombs (5,871,564).

Initially, these claims are allowable for the reasons discussed above with respect to claims 1-12, 16-25, 27 and 29-33.

In addition, these claims relate to the use of a pressure relief valve having an audible signal upon releasing air. Applicant disagrees with the Examiner's assertion that the McCombs reference teaches this feature. The relevant portion of McCombs states:

> As shown in FIG. 2 compressor assembly 24 includes conventional components such as a heat exchanger 108, compressor 110, a relief valve 112 and a high pressure switch 124. Valve 112 is operatively connected to compressor 110 through piping 106. In operation, valve 112 limits the pressure of the air supplied to the compressor 110 at a predetermined pressure. Similarly, high pressure switch 124 is operatively connected to heat exchanger 108 to limit the feed stream pressure to a predetermined limit. The high pressure switch 124 is a conventional switch that indicates high pressure within the valve block 64. The indicator can be either audio or visual or even both. The visual indicator is

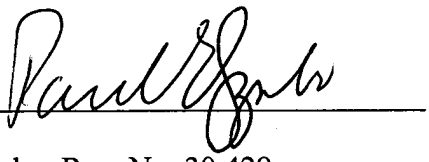
normally seen through conventional LED devices 132 found on the circuit board 70 (FIG. 8).

McCombs distinguishes between the relief valve 112 and the high pressure switch 124. The high pressure switch is the one that can produce an audible indication, not the relief valve. And this indication is remote electrically (124 is an electrical switch, not a valve), as opposed to an indication at the site itself. This is not a clear teaching of, for example as specified in claim 14, "wherein said pressure relief valve creates an audible signal upon releasing air". Thus, these claims are allowable also.

In view of the foregoing amendment and remarks, applicant submits that this application is in condition for allowance, and notice to that effect is respectfully requested.

Respectfully submitted,

Date: 1-11-06



Paul E. Szabo, Reg. No. 30,429
CALFEE, HALTER & GRISWOLD LLP
(216) 622-8200